

# Ricin Poisoning

*Disease Fact Sheet Series*

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## What is ricin?

Ricin is a stable toxin easily made from the mash that remains after processing Castor beans (*Ricinus communis*) for oil. Castor Oil was once used as an oral laxative, but is now used mainly as an industrial lubricant and for preparing leather products. Castor beans are grown agriculturally worldwide and the plants grow wild in arid parts of the United States. Castor beans are slightly larger than pinto beans, darkly colored with light mottling, and have a small light-brown cap at one end. They have been described as looking like blood-engorged ticks. The beans are not normally used as food. Poisoning can occur following inhalation, ingestion, or injection of ricin toxin from Castor beans.

## Who gets ricin poisoning?

While there has been relatively little human experience with the ricin toxin, poisoning can occur following inhalation, ingestion, or injection of the toxin. Ricin poisoning has occurred in suicide attempts, following accidental ingestion of castor beans, and in acts of bioterrorism and assassination. The possibility of ricin poisoning is extremely low in Wisconsin, but at least one instance of ricin toxin manufacturing occurred in the 1990s.

## What are the symptoms of ricin poisoning?

Eating Castor beans or ricin-contaminated material causes diarrhea, nausea, vomiting, abdominal cramps, internal bleeding, liver and kidney failure, and circulatory failure. Rapid heartbeat can also occur. If the castor beans are swallowed whole, the poisoning will be less severe than if the beans are chewed. Breathing dust that contains ricin causes cough, weakness, fever, nausea, muscle aches, difficult breathing, chest pain, and cyanosis (blue skin). Breathing the dust can result in respiratory and circulatory failure. Exposure to concentrated ricin particles in the air is only likely during an act of bioterrorism where large numbers of people would likely experience the signs and symptoms in one place and time. Injection of ricin toxin would likely result in tissue (muscle) necrosis near the injection site, probable multiple organ failure, and death. All routes of exposure are very dangerous and can result in death.

(Over)

**How soon do symptoms appear?**

The time from exposure to ricin toxin to onset of symptoms can range from less than 1 hour to 12 hours or greater. Symptoms of poisoning from eating ricin-contaminated food or Castor beans can occur within 2-3 hours.

Inhalation of ricin-contaminated particles can cause symptoms within 3 hours. Sometimes the symptoms can be delayed many hours.

**How is ricin poisoning spread?**

Ricin poisoning is not contagious, and is not spread from one person to another. A person must be exposed to ricin by inhalation, ingestion, or injection to be poisoned.

**What is the treatment for ricin poisoning?**

Antitoxins are not available for treatment of ricin poisoning. Hospital care is necessary to support the victim and treat the effects of ricin toxin.

**What happens if ricin poisoning is not treated?**

In cases of severe ricin poisoning death can be caused by kidney failure, respiratory failure, circulatory collapse, or fluid loss.

**How can ricin poisoning be prevented?**

Do not grow the Castor bean plant indoors or in areas where people may come in contact with the beans. Castor beans have been described as very attractive due to their unique mottling patterns and may be of interest to curious children. Do not eat unidentified seeds or beans. Do not drink Castor Oil for medicinal purposes. If you notice any of the symptoms or signs of illness described above, seek medical help immediately.